

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
Heinz Binder et al) Group Art Unit:
Application No.:) Examiner:
Filed: October 11, 2001)
For: METHOD FOR VERTICAL MIXING)
AND DEVICE FOR THIS)
)
)
)
)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination of the above-captioned patent application, kindly enter the following amendment.

IN THE ABSTRACT:

Please replace the Abstract with the new Abstract attached.

IN THE SPECIFICATION:

Page 1, after the title, insert therein as a subheading --BACKGROUND OF THE INVENTION--.

Page 1, line 35 insert as a subheading --SUMMARY OF THE INVENTION--;

Page 5, after line 11, insert as a subheading --BRIEF DESCRIPTION OF THE DRAWINGS--;

Page 5, after line 16, insert as a subheading --DETAILED DESCRIPTION OF
THE PREFERRED EMBODIMENTS--.

Page 7, delete in its entirety.

IN THE CLAIMS:

Please cancel claims 1-10 and add the following claims:

11. A method for driving a vertical mixer with at least one rotatable mixing tool provided in a housing, with at least one inlet for a product to be mixed, with at least one outlet and with at least one drive, comprising:

continuously completely filling the vertical mixer in an operating state, a shear field being built-up in the product by the mixing tool; and

establishing continuous product flow from the inlet of the product to be mixed as far as the outlet of the product to be mixed, such that a primary product is fed continuously into the vertical mixer and the flow of the primary product can be regulated in a dosed fashion at the outlet.

12. A method according to claim 11, wherein the mixing tool can be adjusted at least partly to backward conveyance in an opposite direction to the product flow.

13. A method according to claim, 11, wherein the vertical mixer serves as dosing device.

14. A method according to claim 12, wherein the vertical mixer serves a dosing device.

15. A method according to claim 11, wherein directly before or after the vertical mixer there is inserted at least one of an extruder, forage pellet press, an expander, and a batch mixer.

16. A method according to claim 12, wherein directly before or after the mixer there is inserted at least one of an extruder, forage pellet press, an expander and a batch mixer.

17. A method according to claim 13, wherein directly before or after the mixer there is inserted an extruder, forage pellet press, an expander and a batch mixer.

18. A method according to claim 11, wherein the product is pressed by means of the mixing tool in a direction of an inner wall of the housing.

19. A device for driving a vertical mixer comprising:
at least one rotatable mixing tool provided in a housing for building up a shear field in the product during an operating state;
at least one inlet for a product to be mixed;

at least one outlet, continuous product flow being established from the inlet as far as the outlet such that a flow of a primary product can be regulated in a dosed fashion at the outlet; and

at least one drive, the mixing tool being arranged on a shaft and a product discharge device being provided at the outlet.

20. A device according to claim 19, wherein the mixing tool is provided with paddles arranged on a hollow shaft, and inside the hollow shaft there is an inner shaft for a rotary slide valve produced at the outlet.

21. A device according to claim 20, wherein the drive is connected to the hollow shaft and to the inner shaft of the rotary slide valve via adjustable gearing or the inner shaft with the rotary slide valve is driven separately.

22. A device according to claim 19 comprising, above an opening of the outlet in a housing floor, an intermediate floor provided with an opening, whereby the intermediate floor blocks off a cross-section of the opening of the outlet to divert the product.

23. A device according to claim 20 comprising, above an opening of the outlet in a housing floor, an intermediate floor provided with an opening, whereby the

intermediate floor blocks off a cross-section of the opening of the outlet to divert the product.

24. A device according to claim 19, wherein the vertical mixer has additional points for gaseous, liquid, powdery or pasty additives.

25. A device according to claim 20, wherein the vertical mixer has additional points for gaseous, liquid, powdery or pasty additives.

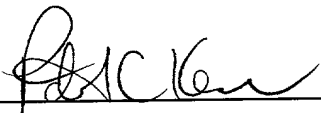
26. A method according to claim 11, wherein the method is used to drive at least one of a vapor, liquid, powdery and pasty product.

REMARKS

The above amendments are made to place the application into better condition for examination. Favorable consideration of the application is respectfully requested.

Respectfully submitted,

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Attachment to Preliminary Amendment

ABSTRACT

The invention relates to a method for the vertical mixing of gaseous, liquid, powdery and/or pasty products using, for example, a hollow shaft and inner shaft arranged in a housing, whereby paddle-shaped mixing tools are provided on the hollow shaft and on the inner shaft there is provided a discharge device arranged below an outlet of the mixer. The mixer is thereby completely filled in the operating state and the product and additives are pressed onto the inner wall of the housing by means of the mixing tools. The product flows continuously downwards under the force of gravity and acts against the partly backward-conveying paddles. The continuous products flow is regulated using a rotary slide valve provided at the outlet. The mixer is especially suitable as a dosing device and/or for lubricating extruder and/or expander products.